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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,370	07/18/2006	Emmanouil Spyrou	288840US0PCT	2986
22850	7590	05/27/2010	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			SERGENT, RABON A	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			05/27/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/586,370	Applicant(s) SPYROU ET AL.	
	Examiner Rabon Sergent	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennig et al. ('966).

Patentees disclose the production of carbodiimides wherein polyisocyanates are heated to a temperature above 150°C in the presence of a catalyst, wherein the catalyst is an isocyanate compound containing biuret, urea, amido, urethane, allophanate, isocyanurate, uretdione, or uretonimine groups. Patentees further teach that these compounds are produced by reacting polyisocyanates with isocyanate reactive compounds that will yield the aforementioned groups. See abstract and columns 2 and 3, especially column 3, lines 3-52.

3. Though the reference fails to disclose that these catalytic compounds may be formed *in situ*, the position is taken, since the catalytic compounds are derived from the same polyisocyanates that the carbodiimides are formed from, that it would have been obvious to form

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them *in situ* by reacting the polyisocyanate starting materials with initial compounds that will yield the disclosed groups, so as to arrive at a more efficient and less costly process.

Furthermore, in view of the disclosure within column 3, lines 20-39, the skilled artisan would have recognized that the required catalytic groups can be formed from conventional reactants, such as the claimed water, which upon reaction with polyisocyanates will yield the disclosed catalytic compounds having the disclosed urea or biuret groups. The position is taken that these reactions are extremely well known within the art. Furthermore, since the disclosed catalytic compounds may possess the groups recited within claim 5, the position is taken that it would have been obvious to utilize such compounds in the process.

4. Applicants have argued that Hennig et al. does not disclose a method in which water, a water-containing substance, or a water-releasing substance is used as a catalyst. In response, the examiner has explained his position as to how Hennig et al. renders the claims *prima facie* obvious; however, applicants have failed to appreciate and/or adequately address this position. Merely setting forth what the examiner has already acknowledged fails to constitute an adequate response. Furthermore, applicants have referenced their arguments with respect to Meisert et al. In response, these arguments have also been considered; however, they are insufficient to overcome the prior art rejection for the following reasons. Firstly, applicants' argument regarding "the complex mixture of five (possibly six) substances" and the argued "assertion" by the examiner that this mixture is catalytically active only on the basis of urea present in the mixture is not well-taken. The examiner has not made any such assertion with respect to Meisert et al., and it is noted that applicants' claims in no way exclude the other argued substances. The examiner finds nothing in this argument that is convincing of patentability. Secondly, applicants

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have referred to their examples to rebut the rejection; however, the examples are not commensurate in scope with the claims in terms of component species or component amounts or reaction conditions. It has been held that the claims must be commensurate in scope with any showing of unexpected results. *In re Greenfield*, 197 USPQ 227. It has further been held that a limited showing of criticality is insufficient to support a broadly claimed range. *In re Lemin*, 161 USPQ 288. Accordingly, applicants' arguments with respect to the examples are insufficient to rebut the prima facie case of obviousness.

5. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennig et al. ('966) as applied to claims 1-5 above, and further in view of Orywol et al. ('519).

As aforementioned, the teachings of Hennig et al. are considered to render obvious the addition of water to polyisocyanates, which under the disclosed reaction conditions, will yield the disclosed urea functional catalytic compounds and promote the formation of carbodiimide groups. However, while the primary references fail to disclose the use of applicants' claimed water-containing or -releasing substances, the use of such substances to generate urea groups was known at the time of invention. Orywol et al. disclose at column 1, lines 41-46; column 3, lines 50+; column 4, lines 1-24; and column 5, lines 25-36 that water containing zeolites may be incorporated within polyisocyanate compositions to release water that reacts with the polyisocyanates to produce urea groups while taking up the resulting carbon dioxide by-product to prevent bubble formation. Accordingly, the position is taken that it would have been obvious to utilize this known technique of introducing water into a urea forming reaction system, especially in situations where the evolution of carbon dioxide as a free gas was not desired.

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6. Applicants' arguments have been considered; however, applicants have failed to appreciate the combined teachings of the references. It is insufficient to merely argue the secondary reference without appreciating what the combined teachings of the primary and secondary references would have conveyed to one of ordinary skill in the art.

7. Claims 2, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennig et al. ('966) as applied to claims 1-5 above, and further in view of Narayan ('095) and Dunwald et al. ('479).

As aforementioned, the teachings of Hennig et al. are considered to render obvious the addition of water to polyisocyanates, which under the disclosed reaction conditions, will yield the disclosed urea functional catalytic compounds and promote the formation of carbodiimide groups. Though the primary reference does not disclose the use of the cocatalysts, the position is taken that organometallic catalysts were known to be useful as carbodiimide promoting catalysts at the time of invention. This position is supported by the teachings of Narayan at column 2, line 64 through column 3, line 56 and Dunwald et al. at column 4, line 50. Accordingly, the position is taken that it would have been obvious to use these catalysts in addition to those of the primary reference, because it has been held that it *prima facie* obvious to combine compositions that are taught by the prior art to be useful for the same purpose, so as to obtain a composition that is to be used for the same purpose. *In re Kerkhoven*, 205 USPQ 1069. Furthermore, since the disclosed catalysts of the secondary references would have been expected to promote the reaction between the polyisocyanates and water to yield the required catalytic compounds, the position is taken that it would have additionally been obvious to add them for this reason.

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8. Applicants' arguments have been considered; however, applicants have failed to appreciate the examiner's position set forth with respect to the primary reference and have again failed to appreciate the combined teachings of the references. It is insufficient to argue the secondary references without appreciating what the combined teachings of the primary and secondary references would have conveyed to one of ordinary skill in the art.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

/Rabon Sergent/
Primary Examiner, Art Unit 1796